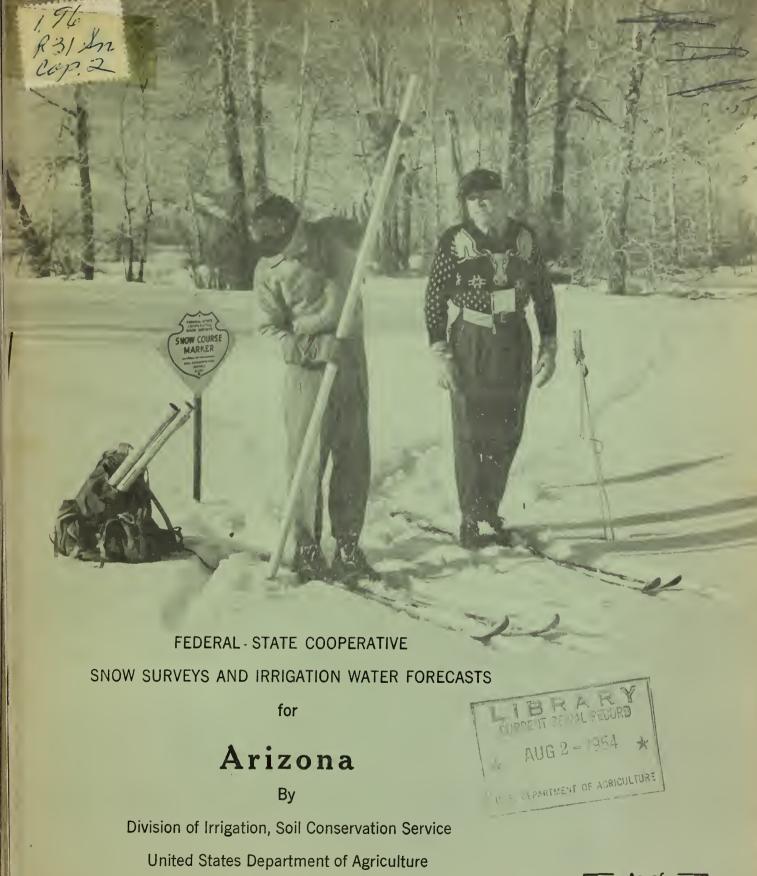
Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

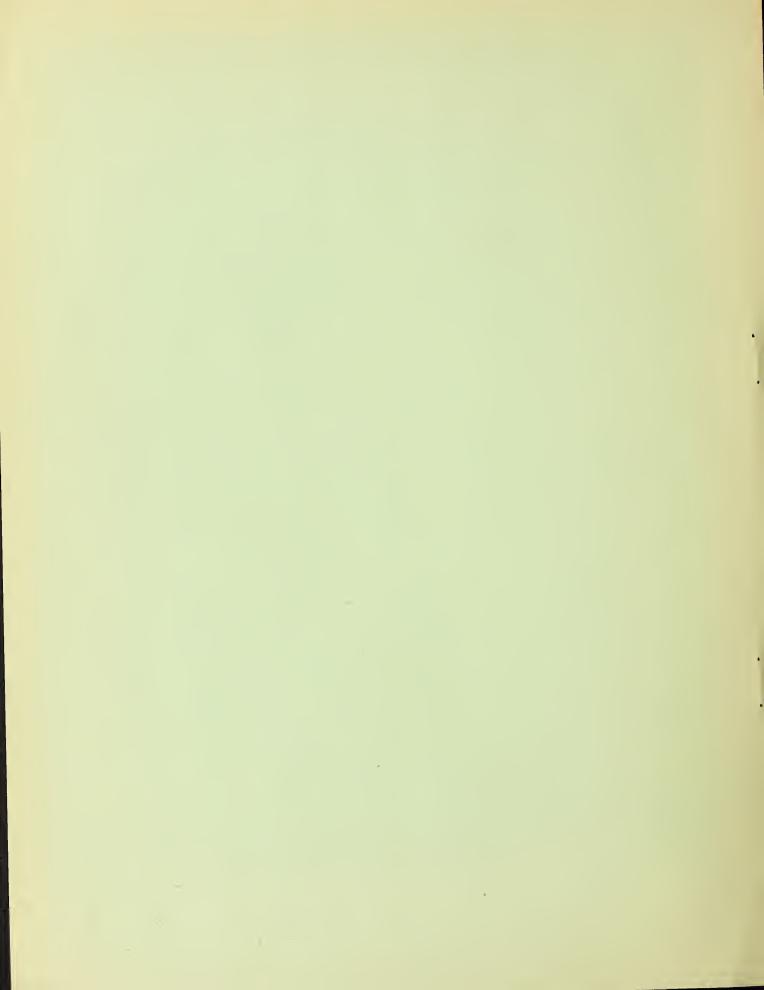




Data included in this report were obtained by the agency named above in cooperation with the Federal, State and local organizations listed on the last page of this report.

As of

MAR. 15, 1951



FEDERAL-STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS

FOR

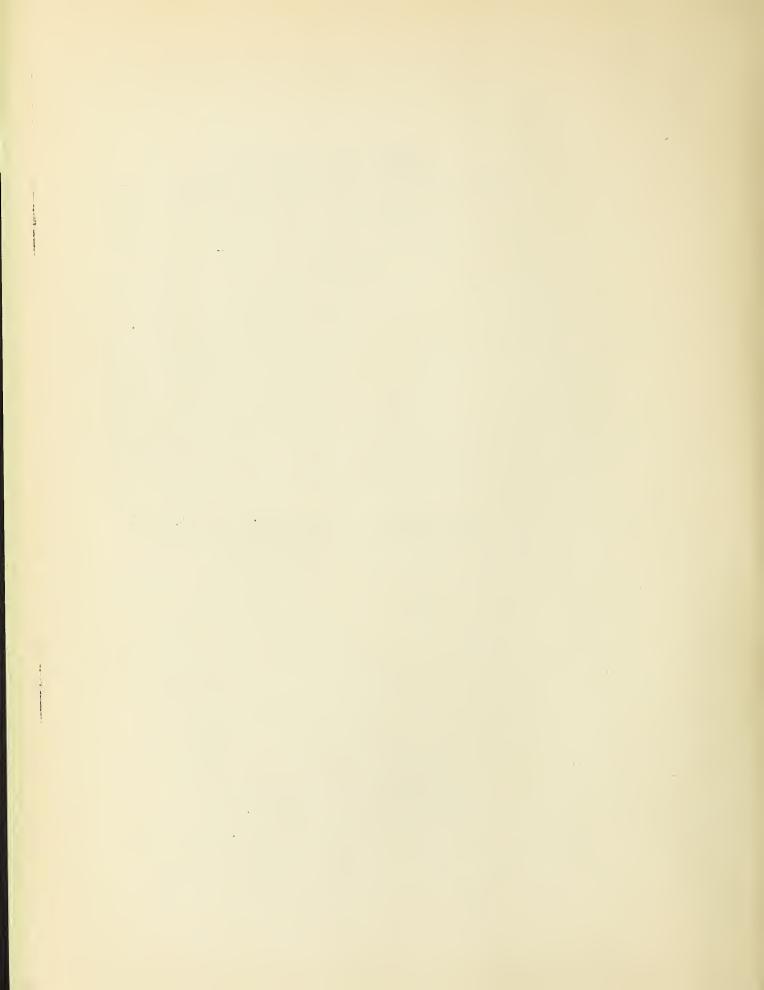
ARIZONA

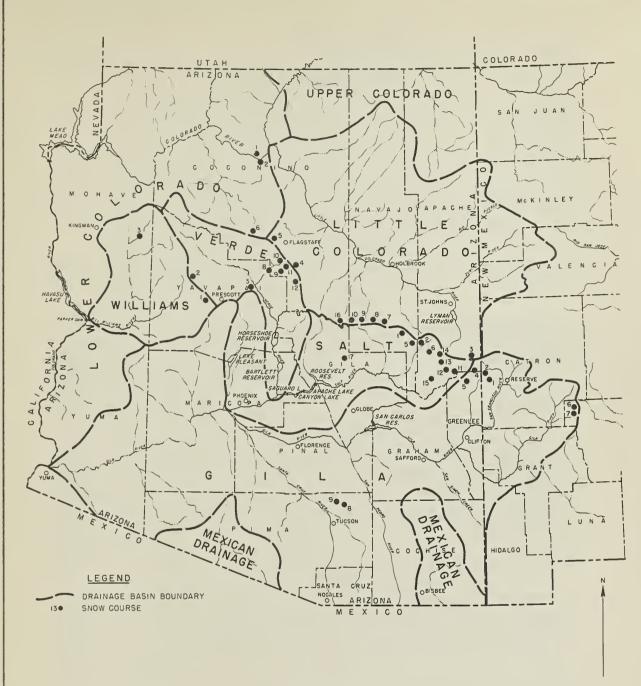
Report Prepared

bу

Burke Peterson -Irrigation Engineer

Division of Irrigation Soil Conservation Service Room 24, Post Office Building Phoenix, Arizona





ARIZONA COOPERATIVE SNOW SURVEYS

SNOW COURSES AND DRAINAGE BASINS
DECEMBER 1950



INDEX TO SNOW COURSES

NUMB	SER NAME E	LEVATION
	LITTLE COLORADO RIVER	
1. 2. 3. 4. 5. 7. 8. 10. 11. 12.	Forest Dale McNary Nutrioso Mormon Lake Fort Valley Gentry Heber Canyon Creek Elk Mormon Mountain Happy Jack Woods Canyon WILLIAMS RIVER	6,000 7,200 8,500 7,350 7,350 7,600 7,600 7,600 7,500 7,630 7,640
1.	Iron Springs	. 6,200
2.	Camp Wood	5,700 5,000
	GILA RIVER	
1.	Frisco Divide (N.M.)	8,000
2. 3. 4. 5. 6. 7. 8. 9.	State Line (N.M.) Nutrioso . Coronado Trail Beaver Head . Taylor Creek (N.M.) Inman (N.M.) Rose Canyon Bear Wallow	8,000 8,500 8,000 8,000 7,850 7,800 7,300 8,100
	VERDE RIVER	
1. 2. 3. 4. 5. 6. 8. 9. 10. 11.	Iron Springs	6,200 5,700 7,100 7,350 7,350 7,100 6,500 6,930 7,300 7,500 7,630
1.	Forest Dale	. 6,000
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 15. 16.	McNary Nutrioso Coronado Trail Milk Ranch McKay Gentry Heber Canyon Creek Elk Big Lake Knoll Maverick Fork Baldy Ft. Apache Pacheta Woods Canyon Parker Creek LOWER COLORADO RIVER	7,200 8,500 8,000 7,000 7,600 7,600 7,600 8,800 9,050 9,050 9,160 9,160 7,600
1.	Bright Angel	· 8,400
2. 5. 6.	Grand Canyon	7,5007,350

WATER SUPPLY OUTLOOK

Arizona

March 15, 1951

<u>Precipitation</u>. Precipitation has been far below normal during the past month. Soil moisture conditions are poor to fair on the higher elevations of the Salt River Drainage, and are generally good on the Verae River Drainage. The soil moisture conditions on the Gila River Drainage are poor.

Snow Cover. The only snow of any consequence remaining on the Verde River Drainage is on Mormon Mt. where there is still about 12 inches. Snow is present along the Mogollon Rim in scattered drifts. The soil is saturated along the Rim country. Soil moisture conditions are good along the east slope of the Verde watershed. No runoff of any consequency will result from this snow cover. Practically all feeder streams to the Verde River are dry at this time.

There are 1 to $1\frac{1}{2}$ of dry powdery snow remaining on the Mt. Baldy area of the Salt River Drainage. Warm temperatures and high winds will evaporate most of the remaining snow. The soil in most places is dry under the snow cover. There is no snow remaining on the lower elevations of the Salt River Drainage. Very few feeder streams are running, most of them having been dry all season.

The snow cover has completely gone from the Gila River Drainage, and the San Carlos Reservoir on the Gila is empty. Soil mcisture conditions are very poor.

There are only dry scattered drifts remaining on the Little Colorado River Drainage.

There still remains about $l^{\frac{1}{2}}$ feet of snow at the North Rim of the Grand Canyon, but there is none left on the South Rim.

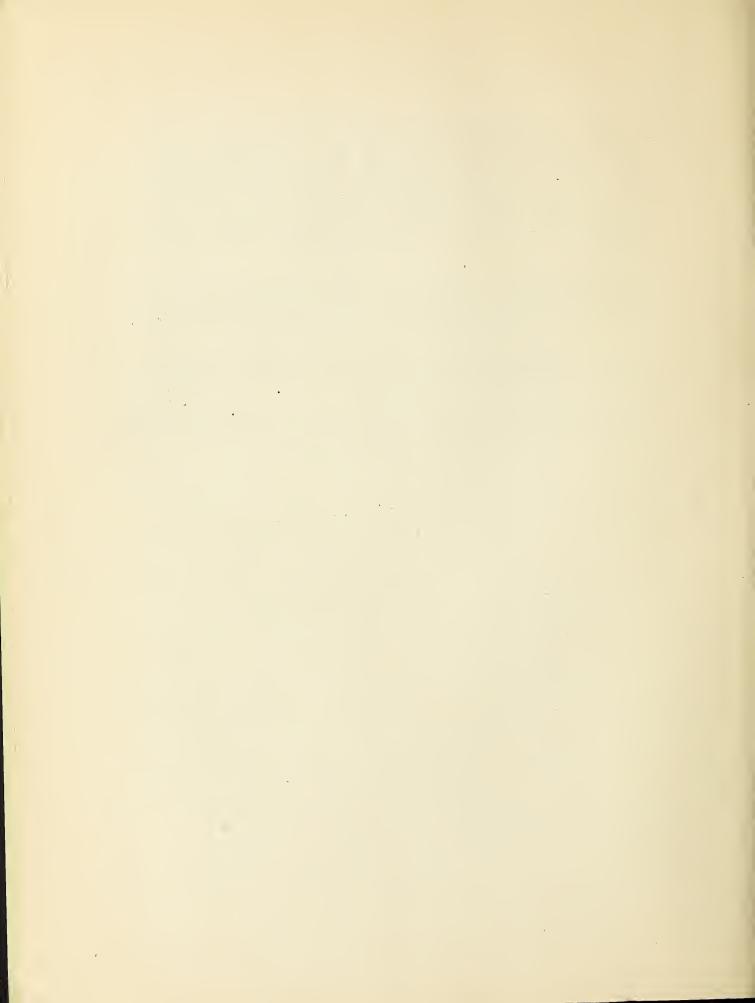
A de l'entera La servició La servició La servició de la servici

Runoff. The State is experiencing the poorest runoff into its major reservoirs of any year of record. There will be no additional runoff of any consequence resulting from the remaining snow cover. The Salt River has never carried more than 275 cubic feet per second all season, nor has the Verde River carried over 360 cubic feet. The flow of these rivers is now dropping steadily. The Gila River has added no storage to the San Carlos Reservoir.

Reservoir Storage. With promise of no added runoff, the State is entering the main irrigation season with slightly more than 250,000 acre feet of water in its reservoirs. This is about 8 percent of the combined reservoir storage capacity.

The San Carlos Reservoir on the Gila River contains no usable storage, and four other major reservoirs, including Roosevelt, have less than 7,000 acre feet each.

Lake Mead contains 17,031 thousand acre feet, Lake Havasu 628,000 acre feet, and Lake Mohave 1,587,000 acre feet.



T.BLE 1

ARIZONA SURVEYS MARCH 15, 1951

		er	(8)																								
	Record	Avg.Water Content	(Inches		0.3	1,3	1.7	7.0	2.7							2.6		1,5	2.5	1.7	3.3	2.7	0.3	0.5	₽•0	2.3	1.7
REMENTS	Past 1	Years of	Record		11	11	11	4	4									11	11	11	11	11	ω	വ	23	2	
SNOW COVER PELISUREMENTS	Inches)		1949		0.0	0.0	5.4	16.6	8 8	New Course	Mew Course	New Course	New Course	New Course	ırse	6.1		6.2	4.7	5	8,8	5.6	N.R.	N.R.	0.0	3.8	4.5
SNOW	Content(]		1950		0	0	0	0	0	0	0	0	0	0	New Course	0		0	0	0	0	0	0	OD.	0	0	0
	Water C		1951		0.	0	0	0	0	H	H	H	H	0•₹	0.5	I		0	0	0	0	0	0	0	0	0	0
		Snow Depth	(Inches)		0,	0	0	0	0	₽	€⊣	₽	₽	11,2	1.5	T		0	0	0	0	0	0	0	0	0	0
		Date	Survey		•		3/15	3/15	3/15	3/15	3/15	3/15	3/15	3/16	3/15			3/15	3/15	3/15	3/15	3/15	3/15	3/15	3/15	3/15	
		Elev.			0009	7200	8500	7350	7350	7600	0092	7500	7600	7500	7630			8000	8000	8500	8000	8000	7850	7800	7300	8100	
		R P P			21E	23E	30区	8足	至9	15E	15E	15E	14E	8臣	96			20W	2111	30正	30E	30回	10W	TOW	16E	16E	
		Twp	٠		N6	8N	eN	18N	22N	IIN	11N	lln	11N	18N	17N			68	63	N9	2N	4N	108	118	125	125	
		S e o			2	14	23	13	22	36	28	18	31	14	30			31	9	23	56	13	20	9	15	9	
NOI		Number		RIVER	1	2	23	₹4	വ	7	ω	6	10	11	12			Н	2	23	ᆉ	വ	9	7	8	6	
LOCATION		DRAINIGE BISIN	JRSE	LITTLE COLORADO RIVER	Forest Dale	McNary	Mutrioso	Mormon Lake	Fort Valley	Gentry	Heber	Canyon Creek	Elk	Mormon Mt.	Happy Jack	.\vg.	GIL: RIVER	Frisco Divide	State Line	Mutrioso	Coronado Trail	Beaver Head	Taylor Creek	Inman	Rose Canyon	Bear Wallow	ivg.

. 4 . .

TABLE 1
ARIZONA SNOW SURVEYS MCRCH 15, 1951

LOCATION	ION								SNOW	SNOW COVER MELSUREMENTS	UREMENTS	
								W.TER C	CONTENT (1	Inches)	Past	
DRAINAGE BASIN						Date	Snow				Years	iv. Water
and	Number	Sec.	Twp.	Rge.	Elev.	Jo	Depth				oĮ.	Content
SNOW COURSE						Survey	(Inches)	1951	1950	1949	Record	(Inches)
WILLIAMS RIVER												
Iron Springs	~	22	14N	3W	6200	3/12	0	0	0	3.4	ಬ	0.7
Camp Wood	23	23	16N	M9	5700	3/15	0	0	0	8.0	വ	0.2
Willow Ranch	3	16	21N	11W	2000	3/15	0	0	0	N.R.	5	0.0
Avg.							0	0	0	2.1		0.3
SILT RIVER												
Forest Dale	1	2	N6	21E	0009	3/15	0	0	0	0.0	11	
NoWary	2	14	8N	23臣	7200	3/15	0	0	0	0.0	11	
Nutrioso	3	23	eN	30回	8500	3/15	0	0	0	5.4	11	1.7
Coronado Trail	상	56	2N	30日	8000	3/15	0	0	0	88	11	
Filk Ranch	വ	28	8N	23瓦	7000	3/15	0	0	0	0.0	10	•
Gentry	7	36	11N	15E	7600	3/15	[-	₽	0	New Course	s e	
Heber	∞	28	11N	15E	7600	3/15	€⊣	₽	0	New Course	s e	
Canyon Creek	6	18	11N	15E	7500	3/15	E-1	₽	0	New Course	s e	
Elk	10	31	11N	14压	7600	3/15	€⊣	₽	0	New Course	ω ω	
Big Lake Knoll	11	2	5N	28臣	8800	No	Survey		7.4	New Course	ω Φ	
Faverick Fork	12	13	N9	27E	9050	No.			7.0	New Course	ω Φ	
Bal dy	13	28	7N	27E	0006	3/14	12.0	4.0	3.0	New Course	0 0	
Ft. pache	14	18	7 N	27E	0006	3/14	17.1	5,5	2,7		s e	
Pacheta	15				7800	3/15	0	0	0	New Course	se	
Avg.							2.4	0,8	1.4	2.8		1.4

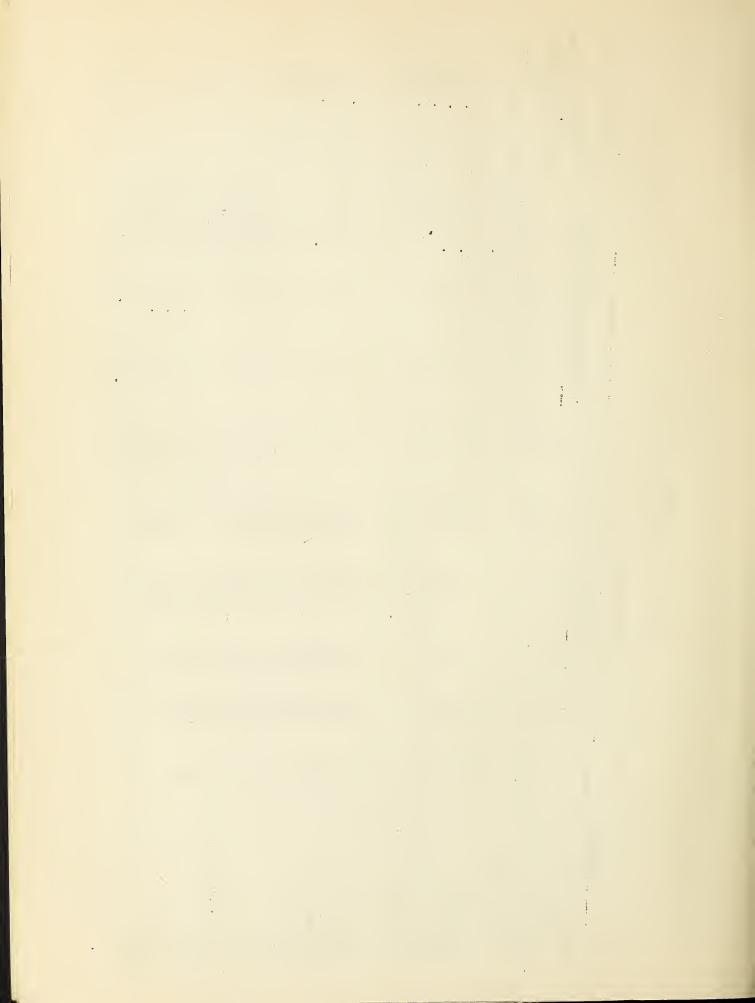


TABLE 1
ARIZONA SHOW SURVEYS MARCH 15, 1951

	LOCATION	Ь							SMOW CO	SNOW COVER HEASUREMENTS	ELENTS	
								Water	Content(Inches	nches)	Past	Record
DRAINAGE BASIN		ō	ģ	t i		Date	Snow				Years	iv. Nater
and SNOW COURSE	Namper	2000	• 4M 7	7. D. D. D	• ADTO	Survey	(Inches)	1921	1950	1949	Record	(Inches)
TITED OF TIMED												
אמייי מיייייי												
Iron Springs	П	22	141	314	6200	3/15	0	0	0	3.4	5	0.7
Camp Wood	2	23	16N	6W	5700	3/15	0	0	0	0,8	വ	0.2
Mingus Mt.	83	60	15N	2三	7100	3/15	0	0	0	N.R.	63	0.7
Formon Lake	Zi	13	18N	8臣	7350	3/15	ガスン		0	16.6	4	
Fort Valley	2	22	22N	9	7350	3/15	€⊣	₽	0	& &	4	2.7
Chalender	9	27	22N	엄	7100	3/15	3.0	1.0	0	8.4		3.2
Junds Park	ထ	7	18N	7E	6500	3/16	€⊣	₽	0	New Course	Φ	
Casner Park	ග	19	18N	8正	6930	3/16	E-4	€⊣	0	New Course	Ф	
Antelope Park	10	58	19N	8년	7300	3/16	E-1	₽	0	New Course	Φ	
Mormon lit.	11	14	18N	8년	7500	3/16	11.2	4.0	0	New Course	Ф	
Happy Jack	12	30	17N	王6	7630	3/15	1.5	0.5	New Course			
Avg.							1.4	0.5	0	7.6		2.4
Od: do 100 denino 1	0.117.0											
LOWER COLORINO KIVER	HA V L M											
Bright. Angel	7	34	33N	3E	8400	3/15	21.2	6.8	11.3	17.2	4	11.0
Grand Canyon	2	21	SON	4E	7500	3/15	0	0	0	5.6	4	1.8
Fort Valley	2	22	22N	9	7350	3/15	⊱⊣	[⊣	0	ω	4	2.7
Chalender	9	27	22N	3足	7100	3/15	3.0	1.0	0	8.4	4	3.2
Avg.	`						0.9	1.9	2.8	10.0		4.7

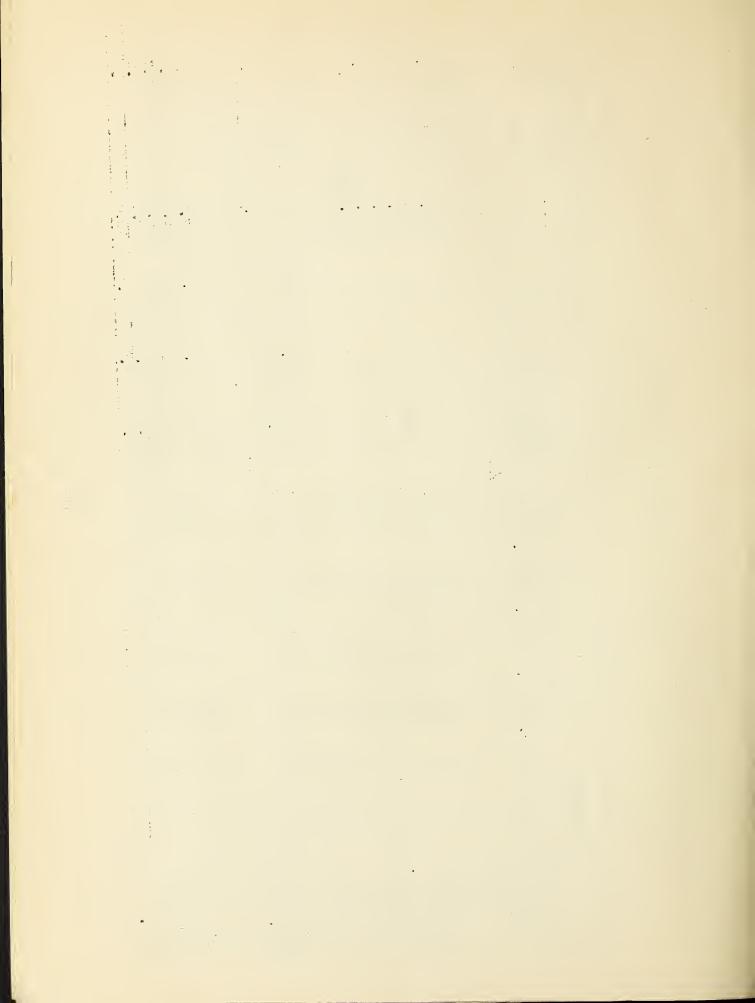
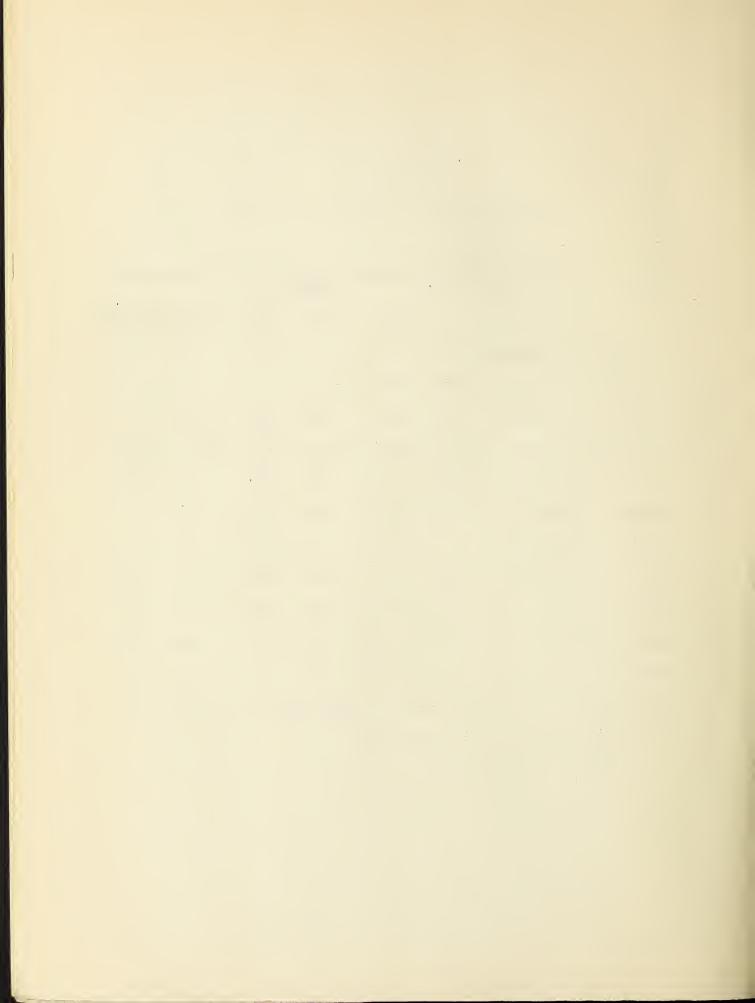


TABLE 2
STATUS OF RESERVOIR STORAGE, MARCH 15, 1951

BASIN and STREAM		USABLE CAPACITY LOOOF.	THOUSM	DS ACRE		STORAGE	About
			1951	1950	1949	1948	10 yr.Avg 1940-1949
Agua Fria	Lake Pleasar	nt 179	1	7	28	1	30
Colorado	Lake Mohave	1,810	1,587	NEW D	Am		
Colorado	Lake Havasu	688	628	662	576	593	569
Colorado	Lake Mead	27,935	17,03}	17,961	17,950	18,888	19,225
Gila	San Carlos	1,200	0	88	242	6	263
Verde	Bartlett	179	7	70	95	17	76 ^a
Verde	Horseshoe	67	1	2	67	1	22 ^b
Salt	Roosevelt	1,382	6	311	282	38	540
Salt	1.pache	245	159	225	120	158	186
Salt	Canyon	58	52	44	33	20	40
Salt	Saguaro	70	47	44	32	31	34

a - Average for years 1941 through 1949

b - Average for years 1946 through 1949



LIST OF SNOW SURVEYORS

SNOW COURSE SURVEYOR
Elk
Canyon Creek
Gentry
Heber
Forest Dale W. E. Fair
McNary W. E. Fair
Milk Ranch W. E. Fair
Casner Park
Munds Park Greaves, West
Intelope Park Anderson, Greaves, West
Mormon Mt
Mormon Lake M. F. Greaves
Mingus Mt M. F. Jones
Iron Springs E. Saxby
Camp Wood Mrs. C. C. Merritt
Willow Ranch Tiny Miller
Grand Canyon Sylvester
Bright Angel Patrick and Patrick
Ft. Valley P. Loska
Chalender J. Levine
Bear Wallow W. H. Hughes
Rose Canyon W. H. Hughes
Pacheta Foch Phillips
Big Lake Knoll west
Maverick Fork
Baldy
Ft. pache
Taylor Creek F. M. Inman
Inman F. M. Inman
Coronado Trail J. B. Shumate
Nutrioso F. E. Casanova
State Line Liedman
Frisco Divide Liedman
Beaver Head Jess Burke Happy Jack Emil Ryberg
Happy Jack Emil Ryberg

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The following organizations cooperate in the Arizona snow survey work:

FEDERAL

Department of Agriculture
Forest Service
Apache Forest
Coconino Forest
Coronado Forest
Gila Forest
Kaibab Forest
Prescott Forest
Sitgreaves Forest
Southwestern Forest and Range Experiment
Station, Fort Valley, Arizona
Sierra Ancha Experiment Forest Station
Soil Conservation Service
Division of Irrigation

Department of Commerce
Weather Bureau
Arizona Section

Department of Interior
Bureau of Reclamation
Region III
Geological Survey
Arizona District
Indian Service
Fort Apache Reservation
National Park Service
Grand Canyon National Park

Gila Water Commissioner Safford, Arizona

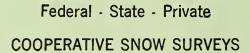
IRAIGATION PROJECTS

Salt River Valley Water Users Association, Phoenix, Arizona

San Carlos Irrigation and Drainage District, Coolidge, Arizona

Southwest Lumber Mills, Inc., McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"